1. A device for manipulating ions, said device comprising:

(a) holder of electrically conductive material having an aperture, said aperture having a central longitudinal axis;

(b) a first electrode extending parallel to said longitudinal axis, said first electrode having a first end fixed to said holder and a second end spaced from said first end;

(c) a second electrode extending parallel to said longitudinal axis and spaced from said first electrode, said second electrode having a first end adjacent the second end of said first electrode, said second electrode having a second end adjacent the first end of said first electrode; and

(d) a rigid support of electrically insulated material having a first end fixed to said holder, said rigid support having a second end fixed to the second end of said second electrode.

2. The device as recited in claim 1, wherein said first electrode is an integral part of said holder.

3. A device for manipulating ions, said device having a longitudinal axis and comprising:

(a) a first holder of electrically conductive material;

(b) a second holder of electrically conductive material spaced from said first holder;

(c) a first electrode extending parallel to said longitudinal axis, said first electrode having a first end fixed to said first holder, said first electrode having a second end adjacent said second holder from said first end;

(d) a second electrode extending parallel to said longitudinal axis, said second electrode having a first end fixed to said second holder and a second end adjacent said first holder;

(e) a first rigid support of electrically insulated material having a first end fixed to said first holder, said first rigid support having a second end fixed to the second end of said second electrode; and

(f) a second rigid support of electrically insulated material having a first end fixed to said second holder, said second rigid support having a second end fixed to the second end of said first electrode.

4. A device as recited in claim 3, wherein said first electrode is an integral part of said first holder and said second electrode is an integral part of said second holder.

5. A device as recited in claim 3, further comprising:

(a) a third electrode extending parallel to said longitudinal axis and spaced from each of said first and second electrodes, said third electrode having a first end fixed to said first holder, said third electrode having a second end adjacent said second holder;

(b) a fourth electrode extending parallel to said longitudinal axis and spaced from each of said first, second, and third electrodes, said fourth electrode having a first end fixed to said second holder, said third electrode having a second end adjacent said first holder;

(c) a third rigid support of electrically insulated material having a first end fixed to said first holder, said third rigid support having a second end fixed to the second end of said fourth electrode; and

(d) a fourth rigid support of electrically insulated material having a first end fixed to said second holder, said third rigid support having a second end fixed to the second end of said third electrode.

6. A device as recited in claim 5, wherein said first and third electrodes are integral parts of said first holder and, wherein said second and fourth electrodes are integral parts of said second holder.

7. A device as recited in claim 5, wherein said first, second, third, and fourth electrodes are located at 90° intervals about said longitudinal axis.

8. A device as recited in claim 5, wherein each of said first and second holders has an aperture that extends along said longitudinal axis.

9. A device as recited in claim 8, wherein each of said apertures is circular and concentric with said longitudinal axis.

10. A method of producing a device for manipulating ions comprising the steps of:

(a) forming a polarity member of electrically conductive material comprising:

(1) a holder having an aperture with a central longitudinal axis; and

(2) a first electrode fixed to said holder and extending parallel to said longitudinal axis;

(b) fixing a rigid support of electrically insulated material to said holder; and

(c) fixing a second electrode to said holder so that said second electrode is spaced from said holder and first electrode and extends parallel to said longitudinal axis.

11. The method as recited in Claim 10, wherein said first electrode is formed integrally with said holder.

12. The method as recited in claim 11, wherein said polarity member is machined from a block of electrically conducted material.

13. The method as recited in claim 10, wherein said rigid support is a first rigid support, said polarity member is a first polarity member, said holder is a first holder having a first aperture and said second electrode is part of a second polarity member of electrically conductive material comprising a second holder fixed to said second electrode and having a second aperture axially aligned with said first aperture, said method further comprising the steps of:

(a) fixing a second rigid support of electrically insulated material to said second holder; and

(b) fixing said first electrode to said second rigid support so that said first electrode is spaced from said second holder.

14. The method as recited in claim 13, wherein said second electrode is formed integrally with said second holder from the same material.

15. The method as recited in claim 14, wherein said first polarity member and said second polarity member is formed by machining from a single block of electrically conducted material.

16. The method as recited in claim 13, wherein said first polarity member has a third electrode fixed to said first holder and said second polarity member has a fourth electrode fixed to said second holder, each of said third and fourth electrodes extending parallel to said longitudinal axis and spaced from said first and second electrodes, said method comprising the steps of:

(a) fixing a third rigid support of electrically insulated material to said first holder;

(b) fixing said third electrode to said third rigid support so that said third electrode is spaced from said second holder;

(c) fixing a fourth rigid support of electrically insulated material to said fourth electrode; and

(d) fixing said fourth electrode to said fourth rigid support so that said fourth electrode is spaced from said first holder.

17. The method as recited in claim 16, wherein said third electrode is formed integrally with said first holder and said fourth electrode is formed integrally with said second holder.

18. The method as recited in claim 17, wherein said first polarity member and said second polarity member are formed by machining from a single block of electrically conducted material.

19. The method as recited in claim 16, wherein said first and third electrodes are directly opposed along said central longitudinal axis and said second and fourth electrodes are directly opposed along said central longitudinal axis and said method further comprises fixing said rigid supports to said first and second holders so that said first and third electrodes alternate with said second and fourth electrodes at 90° intervals about said central longitudinal axis.